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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/722,499
Filing Date: November 28, 2003
Appellant(s): CUYLEN, MICHAEL

Allison M. Tulino
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 01/10/2007 appealing from the Office action mailed 10/19/2006.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings, which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

JP 59045738	MASAO	3-1984
US 3,699,479	THOMPSON et al.	10-1972
US 4,138,596	ROCHE	2-1979
US 2001/0054109 A1	SAINOMOTO et al.	12-2001
US 4,095,165	BOROS	6-1978
US 4,181,850	FAIRBAIRN	1-1980
US 4,087,627	SATO et al.	5-1978
US 5,650,761	GOMM et al.	7-1997

US 2002/0080864 A1	KUTTRUFF et al.	6-2002
US 2001/0040507 A1	ECKSTEIN et al.	11-2001

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

a) The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

b) The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

c) Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Masao (JP 59045738) in view of Thompson et al. (US 3,699,479).

As per claim 1, Masao teaches a method for protected transmission of data whose coding is represented by a first, transmitted sequence having a predetermined number of on and off values, comprising: and generating error information, when a first final value of the count, which, together with the data, is transmitted as a second coded sequence of the count, differs from a second final value, which is also formed from the first transmitted sequence (abstract, Masao).

However Masao does not explicitly teach the specific use of forming a count, from the first transmitted sequence, the count representing the predetermined number, by changing a counting direction after each on-value and by incrementing or decrementing the count for each off-value.

Thompson et al. in an analogous art teach that the operation of the counter 22 is controlled by two units 32 and 34. Unit 32 determines the direction of counting (col. 2, lines 28-30, Thompson et al.). Thompson et al. teach that when a = 0, the unit 32 is actuated to cause the counter 22 to count up and when a = 1, the unit 32 is actuated to cause the counter 22 to count down (col. 2, lines 38-41, Thompson et al.). Thompson et al. teach that if the incoming data on line 38 changes value again so that "a" becomes 1, the direction of counting of counting 22 will reverse (col. 3, lines 30-32, Thompson et al.).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Masao's patent with the teachings of Thompson et al. by including an additional step of forming a count, from the first transmitted sequence, the count representing the predetermined number, by changing a counting direction after each on-value and by incrementing or decrementing the count for each off-value.

This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that it would provide the opportunity to transmit the protected data by transmitting a specific count value depending on the data transmitted.

d) Claims 2-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Masao (JP 59045738) and Thompson et al. (US 3,699,479) as applied to claim 1 above, and further in view of Roche (US 4,138,596).

As per claim 2, Masao and Thompson et al. substantially teach the claimed invention described in claim 1 (as rejected above).

However Masao and Thompson et al. do not explicitly teach the specific use of the method, wherein the first, transmitted sequence is structured in a sequence of time slot frames.

Roche in an analogous art teaches that according to the recommendations... the time slots are numbered from 0 to 31 (col. 1, lines 13-23, Roche).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Masao's patent with the teachings of Roche by including an additional step of using the method, wherein the first, transmitted sequence is structured in a sequence of time slot frames.

This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that using the method, wherein the first, transmitted sequence is structured in a sequence of time slot frames would provide the opportunity to transmit the signal using pulse code modulation.

- As per claim 3, Masao, Thompson et al. and Roche teach the additional limitations.

Roche teaches the method, wherein a time slot frame representing a data item is coded by the predetermined number of on and off values (col. 1, lines 13-23, lines 30-33, Roche).

e) Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Masao (JP 59045738), Thompson et al. (US 3,699,479) and Roche (US 4,138,596) as applied to claim 2 above, and further in view of Sainomoto et al. (US 2001/0054109 A1).

As per claim 4, Masao, Thompson et al. and Roche substantially teach the claimed invention described in claim 2 (as rejected above).

However Masao, Thompson et al. and Roche do not explicitly teach the specific use of the method, wherein the sequence of time slot frames is followed by a respectively structured signature frame, which includes the coded sequence of the count.

Sainomoto et al. in an analogous art teach that when the order information is inserted, the order information insertion control unit 1015 adds 1 to the count of the order number counter 1016 and inserts as the order number the added count in the frame (page 5, paragraph 65, Sainomoto et al.).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Masao's patent with the teachings of Sainomoto et al. by including an additional step of using the method, wherein the sequence of time slot frames is followed by a respectively structured signature frame, which includes the coded sequence of the count.

This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that using the method, wherein the sequence of time slot frames is followed by a respectively structured signature frame, which includes the coded sequence of the count would provide the opportunity to use the signature frame at the receiver to detect data transmission error.

f) Claims 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Masao (JP 59045738) and Thompson et al. (US 3,699,479) as applied to claim 1 above, and further in view of Boros (US 4,095,165).

As per claim 5, Masao and Thompson et al. substantially teach the claimed invention described in claim 1 (as rejected above).

However Masao and Thompson et al. do not explicitly teach the specific use of the method, wherein the count assumes periodic values.

Boros in an analogous art teaches that the periodic count responsive to the voltage controlled oscillator frequency attains a certain numerical value equaling the reference count (col. 3, lines 3-6, Boros).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Masao's patent with the teachings of Boros by including an additional step of using the method, wherein the count assumes periodic values.

This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that using the method, wherein the count assumes periodic values would provide the opportunity to use a counter to determine a final result value.

- As per claim 6, Masao, Thompson et al. and Boros teach the additional limitations.

Boros teaches the method, wherein the periodic values of the count are numerical values in a numerical system (col. 3, lines 3-6, Boros).

g) Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Masao (JP 59045738) and Thompson et al. (US 3,699,479) as applied to claim 1 above, and further in view of Fairbairn (US 4,181,850).

As per claim 7, Masao and Thompson et al. substantially teach the claimed invention described in claim 1 (as rejected above).

However Masao and Thompson et al. do not explicitly teach the specific use of the method, wherein the coding of all the on and off values to be transmitted is carried out in a manner that an on-value is followed by at least one off-value.

Fairbairn in an analogous art teaches that this is a well known code in which a '1' is represented by a 1 followed by a 0 (col. 4, lines 41-43, Fairbairn).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Masao's patent with the teachings of Fairbairn by including an additional step of using the method, wherein the coding of all the on and off values to be transmitted is carried out in a manner that an on-value is followed by at least one off-value.

This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that using the method, wherein the coding of all the on and off values to be transmitted is carried out in a manner that an on-value is followed by at least one off-value would provide the opportunity to determine an error in the transmission if an on-value is followed by an on-value is received at the receiver.

h) Claims 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Masao (JP 59045738) and Thompson et al. (US 3,699,479) as applied to claim 1 above, and further in view of Sato et al. (US 4,087,627).

As per claim 8, Masao and Thompson et al. substantially teach the claimed invention described in claim 1 (as rejected above).

However Masao and Thompson et al. do not explicitly teach the specific use of the method, wherein an on-value is formed by a pulse sequence.

Sato et al. in an analogous art teaches to produce a sequence of input pulses G, as indicated at P1, P2, P3, and P4, whenever the input signal A is subjected to a transition in its binary values (fig. 2, col. 4, lines 47-49, Sato et al.).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Masao's patent with the teachings of Sato et al by including an additional step of using the method, wherein an on-value is formed by a pulse sequence.

This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that using the method, wherein an

on-value is formed by a pulse sequence would provide the opportunity to transmit the signal using pulse code modulation.

- As per claim 9, Masao, Thompson et al. and Sato et al. teach the additional limitations.

Sato et al. teach the method, wherein the pulse sequence has an even number of pulses and pauses with a same duty ratio (fig. 2, col. 3, lines 42-46, col. 4, lines 47-49, Sato et al.).

- As per claim 10, Masao, Thompson et al. and Sato et al. teach the additional limitations.

Sato et al. teach the method, wherein a pulse is associated with a predetermined number of carrier oscillations (col. 3, lines 42-44, Sato et al.).

i) Claims 11-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Masao (JP 59045738) in view of Thompson et al. (US 3,699,479) and Gomm et al. (US 5,650,761).

As per claim 11, Masao teaches (a) to transmit data whose coding is represented by a first, transmitted sequence having a predetermined number of on and off values; (c) to generate error information, when a first final value of the count, which, together with the data, is transmitted as a second coded sequence of the count, differs from a second final value, which is also formed from the first transmitted sequence (abstract, Masao).

However Masao does not explicitly teach the specific use of (b) forming a count, from the first transmitted sequence, the count representing the predetermined number of on and off values, by changing a counting direction after each on-value and by incrementing or decrementing the count for each off-value.

Thompson et al. in an analogous art teach that the operation of the counter 22 is controlled by two units 32 and 34. Unit 32 determines the direction of counting (fig. 1, col. 2, lines 28-30, Thompson et al.). Thompson et al. teach that when a = 0, the unit 32 is actuated to cause the counter 22 to count up and when a = 1, the unit 32 is actuated to cause the counter 22 to count down (col. 2, lines 38-41, Thompson et al.). Thompson et al. teach that if the incoming data on line 38 changes value again so that "a" becomes 1, the direction of counting of counting 22 will reverse (col. 3, lines 30-32, Thompson et al.).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Masao's patent with the teachings of Thompson et al. by including an additional step of (b) forming a count, from the first transmitted sequence, the count representing the predetermined number of

on and off values, by changing a counting direction after each on-value and by incrementing or decrementing the count for each off-value.

This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that it would provide the opportunity to transmit the protected data by transmitting a specific count value depending on the data transmitted.

Masao also does not explicitly teach the specific use of a mobile data memory for non-contacting interchange of a sequence of data items with a reader/writer, the mobile data memory comprising a first coding device configured.

However Gomm et al. in an analogous art teach mobile data collecting means...memory (col. 14, lines 11-18, Gomm et al.).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Masao's patent with the teachings of Gomm et al. by including an additional step of using a mobile data memory for non-contacting interchange of a sequence of data items with a reader/writer, the mobile data memory comprising a first coding device configured.

This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that it would provide the opportunity to transmit data from the reader/writer to the mobile data memory.

- As per claim 12, Masao, Thompson et al. and Gomm et al. teach the additional limitations.

Masao teaches a cycle counter for forming the count; and a comparison unit for generating a first error message, when the first final value of the count differs from the second final value (abstract, Masao).

- As per claim 13, Masao, Thompson et al. and Gomm et al. teach the additional limitations.

Gomm et al. teach a reader/writer for non-contacting interchange of a sequence of data items with a mobile data memory, the reader/writer comprising a second coding device (col. 14, lines 11-18, Gomm et al.).

Masao teaches (a) to transmit data whose coding is represented by a first, transmitted sequence having a predetermined number of on and off values; (c) to generate error information, when a first final value of

the count, which together with the data, is transmitted as a second coded sequence of the count, differs from a second final value, which is also formed from the first, transmitted sequence (abstract, Masao). Thompson et al. teach (b) to form a count, from the first transmitted sequence, the count representing the predetermined number of on and off values, by changing a counting direction after each on-value and by incrementing or decrementing the count for each off-value (fig. 1, col. 2, lines 28-30, lines 38-41, col. 3, lines 30-32, Thompson et al.).

- As per claim 14, Masao, Thompson et al. and Gomm et al. teach the additional limitations.

Masao teaches a cycle counter for forming the count; and a comparison unit for generating a second error message, when the first final value of the count differs from the second final value (abstract, Masao).

- As per claim 15, Masao, Thompson et al. and Gomm et al. teach the additional limitations.

Gomm et al. teach an identification system, comprising at least one mobile data memory; and a reader/writer; wherein the mobile data memory and the reader/writer interchange sequences of data via a non-contacting data transmission path (col. 14, lines 11-18, Gomm et al.).

Masao teaches that a coding of the data is represented by a first, transmitted sequence having a predetermined number of on and off values; and a comparison unit to generate error information, when a first final value of the count, which, together with the data, is transmitted as a second coded sequence of the count, differs from a second final value, which is also formed from the first transmitted sequence (abstract, Masao).

Thompson et al. teach a cycle counter configured to form a count, from the first transmitted sequence, the count representing the predetermined number of on and off values, by changing a counting direction after each on-value and by incrementing or decrementing the count for each off-value (fig. 1, col. 2, lines 28-30, lines 38-41, col. 3, lines 30-32, Thompson et al.).

j) Claims 16-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Masao (JP 59045738), Thompson et al. (US 3,699,479) and Gomm et al. (US 5,650,761) as applied to claim 15 above, and further in view of Kuttruff et al. (US 2002/0080864 A1) and Eckstein et al. (US 2001/0040507 A1).

As per claim 16, Masao, Thompson et al. and Gomm et al. substantially teach the claimed invention described in claim 15 (as rejected above).

However Masao, Thompson et al. and Gomm et al. do not explicitly teach the specific use of ISO/IEC 14443 standard.

Kuttruff et al. in an analogous art teach that these standards, such as the ISO/IEC 10536, ISO/IEC 14443 or ISO/IEC 15693, prescribe the data rate of the exchanged data, their coding, the type of modulation, and the carrier frequency of the transmitted signals (page 1, paragraph 4, Kuttruff et al.).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Masao's patent with the teachings of Kuttruff et al. by including an additional step of using the ISO/IEC 14443 standard.

This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that using the ISO/IEC 14443 standard would provide the opportunity to use data rate of the exchanged data and the carrier frequency of the transmitted signals mentioned in the ISO/IEC 14443 standard.

Masao, Thompson et al. and Gomm et al. also do not explicitly teach specifically that the identification system is configured to operate in an ISM frequency band.

However Eckstein et al. in an analogous art teach that the resonant frequency of the first resonant circuit lays in an Industrial, Scientific and Medical (ISM) frequency band as assigned by the International Telecommunications Union (ITU), (page 3, paragraph 30, Eckstein et al.).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Masao's patent with the teachings of Eckstein et al. by including an additional step of using the identification system configured to operate in an ISM frequency band.

This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that using the identification system configured to operate in an ISM frequency band would provide the opportunity to use a transmitter to generate a pulse amplitude modulated signal having a carrier frequency in the range of 13.5 MHz.

- As per claim 17, Masao, Thompson et al. Gomm et al., Kuttruff et al. and Eckstein et al. teach the additional limitations.

Kuttruff et al. teach the ISO/IEC 15693 standard (page 1, paragraph 4, Kuttruff et al.).
Eckstein et al. teach that the identification system is configured to operate in an ISM frequency band (page 3, paragraph 30, Eckstein et al.).

- As per claim 18, Masao, Thompson et al. Gomm et al., Kuttruff et al. and Eckstein et al. teach the additional limitations.

Eckstein et al. teach that the ISM frequency band comprises a 13.56 MHz frequency band (page 3, paragraph 30, Eckstein et al.).

- As per claim 19, Masao, Thompson et al. Gomm et al., Kuttruff et al. and Eckstein et al. teach the additional limitations.

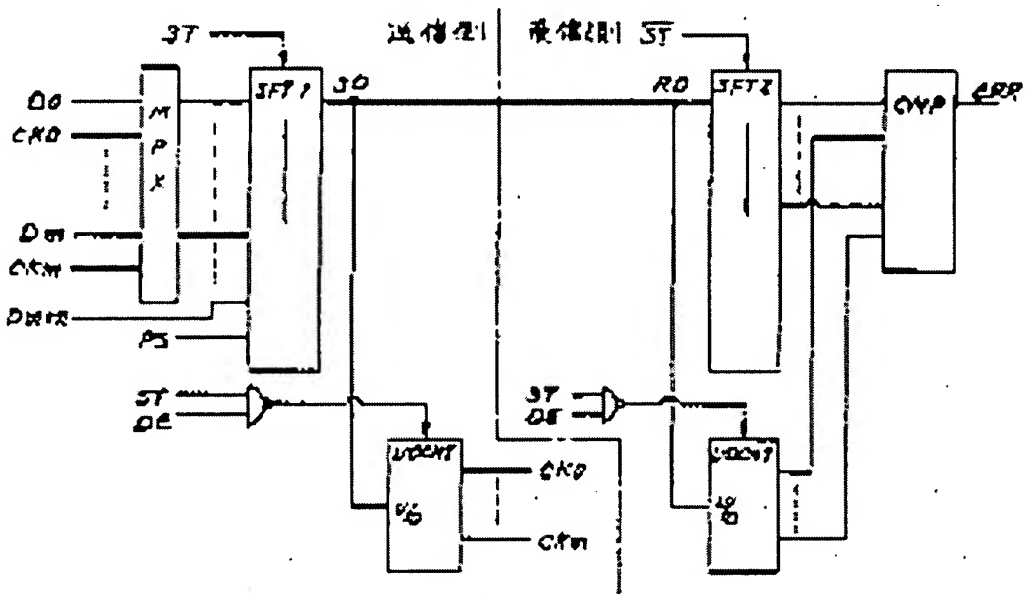
Eckstein et al. teach that the ISM frequency band comprises a 13.56 MHz frequency band (page 3, paragraph 30, Eckstein et al.).

(10) Response to Argument

Appellant argues that as recited in claim 1, both the first final value and the second final value are determined from the first transmitted sequence. Appellant submits that since the alleged second final value of Masao is formed from the RD signal rather than the set data (alleged first transmitted sequence), Masao fails to teach or suggest the claimed second final value.

Examiner disagrees and would like to point out that Masao teaches forming a count, from the first transmitted sequence and a first final value of the count ("A transmission signal SD is inputted to an up-down counter UDCNT to count the difference of the transmitted number of "1"s and "0"s of the transmission data. When the transmission of all data is finished, the operation of the UDCNT is stopped, a transmission end signal END is set, an MPX selects outputs CK_0-CK_m of the UDCNT during the set and the result is set to the SFT_1", abstract, Masao). Masao teaches that the second final value, which is also formed from the first transmitted sequence ("The set data is shifted one by one bit and transmitted to a receiving side. The receiving data RD at the receiving side is inputted to an SFT_2, this is shifted and outputted as a parallel data and the RD signal is counted at the UDCNT", abstract, Masao). The examiner

would like to point out that the receiving data RD is the signal transmitted, which is counted for second final value at the UDCNT (figure of abstract, Masao). Thus Masao teaches the claimed second final value.



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Appellant argues that assuming that the RD signal is used to determine the second final value, the RD signal is only sent to the shift register SFT2 and the UDCNT. Values from these two elements appear to be compared at the comparison circuit CMP (figure of abstract). Appellant submits, however, that there is no teaching or suggestion that the UDCNT value of transmission signal SD is compared with the value of the UDCNT of the receiving data RD.

Examiner disagrees and would like to point out that Masao teaches that at the transmission side, an MPX selects outputs CK_0-CK_m of the UDCNT during the set and the result is set to the SFT_1. The set information CK_0-CK_m is transmitted to the receiving side. A receiving data RD at the receiving side is input to an SFT_2, that is shifted and outputted as a parallel data, the RD signal is counted at the UDCNT and when the final data is received, the coincidence is checked at a comparison circuit CMP (figure in abstract, abstract, Masao). Masao also teaches to detect the even number of bit errors of total bits transferred (purpose in abstract, Masao).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to compare the set information CK_0-CK_m (i.e. first final value of the count) transmitted to the receiving side with the second final count value of the receiving data RD at a comparison circuit CMP.

Thus, Masao teaches that the UDCNT value of transmission signal SD is compared with the value of the UDCNT of the receiving data RD.

Appellant argues that independent claims 11, 13 and 15 contain features that are analogous to the features discussed above in regard to claim 1. Gomm et al. fail to cure the deficient teachings of Masao and Thompson regarding claim 1, Appellant submits that claims 11, 13 and 15 are patentable for at least analogous reasons as claim 1.

Examiner disagrees; the above arguments for claim 1 are also applicable for claims 11, 13 and 15.

Appellant argues that dependent claims 2-10, 12, 14, 16-19 are patentable at least by virtue of their dependency on the independent claims 1, 11, 13 and 15. Masao, Thompson et al. and Gomm et al. fail to teach the features of independent claims as discussed above. Examiner disagrees; please see above arguments for claim 1.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Dipakkumar Gandhi

Patent Examiner

5/3/2007

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